REMARKS

Status of the Claims.

Claims 1-32 are pending with entry of this amendment, no claims being cancelled and no claims being added herein. Claims 5-8 are amended herein. These amendments introduce no new matter. Support is replete throughout the specification (*e.g.*, in the claims as filed).

Objection to the specification.

The Examiner objected to the specification because of the "hyperlink" reference to an internet web site "http://www.kazusa or jp/cyano/". Applicants have deleted the hyperlink thereby obviating this rejection.

Objection to claims 7 and 8.

The Examiner objected to claims 7 and 8 because of the reference to the acronym "sp" in claim 7 and the reference to Cph2 in claim 8. Claims 7 and 8 are amended herein deleting the reference to "sp" in claim 7 and identifying "Cph2" by reference to a SEQ ID NO, thereby obviating this rejection.

35 U.S.C. §112, second paragraph, .

Claims 5-6 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite because of the reference to "apoprotein protein". The examiner alleged there was no antecedent basis for this term. Claims 5 and 6 are amended herein to recite "apoprotein polypeptide" thereby obviating this rejection.

Obviousness-Type Double Patenting.

Claims 1-3, 9-21, and 27-31 were rejected under the judicially created doctrine of obviousness-type double patenting in light of claims 1-4, 6-7. 9-11, 13-16, 19, 21-222, and 24-26 of U.S. Patent No: 6,046,014. Applicants respectfully traverse.

The Examiner is reminded that a double-patenting rejection is essentially an obviousness rejection **in light of the claims** of one or more earlier patents. As stated by the Federal Circuit:

> A double patenting of the obviousness type rejection is "analogous to [a failure to meet] the non-obviousness requirement of 35 U.S.C. §103," except that **the patent principally underlying the double patenting rejection is**

> **not considered prior art**. In *re Longi,* 225 USPQ 645 (Fed. Cir. 1985) *n.4, citing In re Braithwaite* 154 USPQ 29, 34 (CCPA 1967)

The inquiry is whether or not the claimed invention is patentably distinct (nonobvious) from the cited claims and references and this is evaluated under the body of law pertaining to the analysis of obviousness under 35 U.S.C. §103(a).

An obviousness rejection requires a teaching or suggestion to modify the references in the manner indicated by the Examiner. As stated by the Court of Appeals for the Federal Circuit:

> Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. **"Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." Id.** [emphasis added] *Ecolochem, Inc. v Southern-California Edison Company,* __ USPQ2d ___ (Fed. Cir. 2000)
>
> * * *
>
> The mere fact that the prior art may be modified in the manner suggested by the Examiner **does not** make the modification obvious unless the prior art suggested the desirability of the modification. [emphasis added] *In re Fritch*, 23 USPQ 2d 1780, 1783-1784 (Fed. Cir. 1992)

The presently pending claims incorporate a limitation not recited in the claims of the "014 patent. In particular, presently pending claim 1 recites:

> 1. A composition comprising an apoprotein **polypeptide of between about 190 amino acids and about 400 amino acids**, which apoprotein polypeptide comprises a lyase domain. [emphasis added]

The claims of the '014 patent generically refer to a "**a phytochrome apoprotein**", but fail to teach or suggest an apoprotein polypeptide of between a out 190 amino acids and about 400 amino acids. Moreover, the claims of the '014 patent offer no teaching or suggestion to modify the "apoprotein" to a length ranging from about 190 to about 400 amino acids. The claims of the'014

patent are generic to and read on the presently claimed invention, but failing to teach or suggest a 190 to 400 amino acid apoprotein polypeptide fail to render obvious the presently claimed invention.

The Examiner has failed to articulate with particularity a teaching or suggestion of a composition comprising "**an apoprotein polypeptide of between about 190 amino acids and about 400 amino acids**". The claims of the "014 patent are silent respect to apoprotein polypeptide length and with respect to the presence of a lyase domain.

The claims of the '014 invention simply fail to teach or suggest all the elements of the presently claimed invention. Accordingly, the present invention is not obvious in light of these claims and, accordingly, the obviousness-type double patenting rejection should be withdrawn.

35 U.S.C. §102.

Claims 1-3, 6-7, 9-22, 25, and 27-32 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. patent 6,046,014. Applicants respectfully traverse.

Anticipation requires that "**all limitations** of the claim are found in the reference, or 'fully met' by it." Kalman v Kimberly-Clark Corp.; 218 USPQ 781, 789 (Fed. Cir. 1983).

In the instant case, as indicated above, claim 1 of the present application expressly recites:

> 1. A composition comprising an apoprotein **polypeptide of between about 190 amino acids and about 400 amino acids**, which apoprotein polypeptide comprises a lyase domain. [emphasis added]

The '014 patent fails to disclose an apoprotein polypeptide of between about 190 amino acids and about 400 amino acids. Lacking such a disclosure, the '014 patent cannot anticipate the presently pending claims and the rejection of claims 1-3, 6-7, 9-22, 25, and 27-32 under 35 U.S.C. §102(e) should be withdrawn.

Applicants also note that the claims of the '014 patent are generic to and read on the presently claimed invention. Nevertheless, the relationship between the '014 claims and presently claimed invention is one of genus to species. The generic claims of the '014 patent, while dominating, do not anticipate the presently claimed invention and, as indicated above, the rejection under 35 U.S.C. §102(e) should be withdrawn.

35 U.S.C. §103(a).

The Examiner has not made a rejection under 35 U.S.C. §103(a) in light of U.S. Patent 6,046,014. Nevertheless, Applicants note for the record that the present application was filed as a Continuing Patent Application (CPA) on January 24, 2001 (after November 29, 1999). The subject matter of the 6,046,014 patent and the presently claimed invention were both, at the time of invention, subject to an obligation of assignment to the same person. Thus, under 35 U.S.C. §103(c), the 6,046,014 patent shall not preclude patentability under 35 U.S.C. §103.

In view of the foregoing, Applicants believes all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (510) 337-7871.

LAW OFFICES OF JONATHAN ALAN QUINE
P.O. BOX 458
Alameda, CA 94501
Tel: 510 337-7871
Fax: 510 337-7877

Respectfully submitted,

Tom Hunter
Reg. No: 38,498

c:\toms work_amendments\407t uc ott\407t-895200us phytofluors\407t-895200.am1.doc

APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE IN 09/272,809 WITH ENTRY OF THIS AMENDMENT

In the specification:

Page 17, line 26 through page 18, line 9:

Nucleic acids encoding apoprotein polypeptides can be isolated from a number of organisms according to standard techniques. Exemplary genes are those isolated from higher plants (*e.g.*, AsphyA and AtphyA), and the green alga *Mesotaenium caldariorum* (*i.e.* Mcphy1b). In addition, genes encoding apophytochrome can be obtained from cyanobacteria. It was a discovery of this invention that the cyanobacteria *Synechocystis* sp. produces an apophytochrome. In particular, the open reading frame listed in GenBank D64001, locus 1001165 and designated herein as S6803phy1 was determined to be an apophytochrome by sequence alignment methods. Having identified herein that cyanobacteria produce apophytochromes, identification of other cyanobacterial apophytochromes can be accomplished using routine methods available to one of skill in the art. Sequences for these apoproteins are provided in the sequence listing below. The corresponding nucleic acid sequences are known to those of skill in the art. One of skill will recognize that these sequences can be used to determine the design primers and probes for isolation of related genes in other organisms. Cyanobacterial nucleic acid sequences are also available **online** at the Cyanobase Web Site. **[http://www.kazusa.or.jp/cyano/.]**

In the claims:

5. The composition of claim 4, wherein the aopoprotein **[protein]polypeptide** is as shown in SEQ ID NO: 9.

6. The composition of claim 1, wherein the apoprotein **[protein]polypeptide** consists of a lyase domain. NFL ?

7. The composition of claim 1, wherein the apoprotein polypeptide is from Synechocystis**[sp]**.

8. The composition of claim 7, wherein the apoprotein polypeptide [is] **has the amino acid sequence of SEQ ID NO:2** (Cph2).